

Serial No. 09/624,810
Docket No. 13DV-13228

In the Claims:

Please rewrite claims 1, 3, 4 and 6 and add new claims 9 and 10 as follows. A version of the rewritten claims, marked up to show all changes relative to the previous version of the claims, is contained on separate page(s) attached hereto as Appendix A.

A1 Sub 7
1. (Amended) An electron beam physical vapor deposition coating apparatus comprising:
a coating chamber at an elevated temperature and a subatmospheric pressure;
a crucible within the coating chamber;
a coating material surrounded by and contained within the crucible, the coating material having a surface exposed by the crucible;
an electron beam gun projecting an electron beam onto the surface of the coating material, the electron beam defining a beam pattern having a higher intensity at an interface of the surface of the coating material with and the crucible than at a central region of the surface of the coating material.

A2
3. (Amended) An electron beam physical vapor deposition coating apparatus according to claim 1, wherein the electron beam is also projected onto a surface portion of the crucible contiguous with the surface of the coating material, the beam pattern having a higher intensity on the surface portion of the crucible than at the central region of

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the surface of the coating material.

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4. (Amended) An electron beam physical vapor deposition coating apparatus according to claim 1, wherein the beam pattern has a perimeter on the surface portion of the crucible, the electron beam being incident on the surface of the coating material at an oblique angle so as to establish relative to the electron beam gun a proximal point and an oppositely-disposed distal point at the perimeter of the beam pattern, the beam pattern having a lower intensity at the proximal and distal points than elsewhere at the perimeter of the beam pattern.

A3

6. (Amended) An electron beam physical vapor deposition coating apparatus comprising:

a coating chamber containing a coating material, the coating chamber being at an elevated temperature and a pressure greater than 0.010 mbar;

a crucible within the coating chamber;

a coating material surrounded by and contained within the crucible, the coating material having a surface exposed by the crucible;

an electron beam gun projecting an electron beam onto the surface of the coating material and a contiguous surface portion of the crucible, the electron beam forming a beam pattern with a perimeter on the contiguous surface portion of the crucible,

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the electron beam gun melting the surface of the coating material and evaporating molten coating material, the electron beam having a higher intensity at an interface of the surface of the coating material with the contiguous surface portion of the crucible than at a central region of the surface of the coating material, the electron beam being incident on the surface of the coating material at an oblique angle so as to establish relative to the electron beam gun a proximal point and an oppositely-disposed distal point at the perimeter of the beam pattern, the electron beam having a lower intensity at the proximal and distal points than elsewhere at the perimeter of the beam pattern.

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9. (New) An electron beam physical vapor deposition coating apparatus according to claim 6, further comprising means for projecting a separate beam pattern on the crucible for evaporating droplets of the molten coating material on the crucible, the separate beam pattern having a higher intensity than the beam pattern on the coating material.

10. (New) An electron beam physical vapor deposition coating apparatus according to claim 1, further comprising means for projecting a separate beam pattern on the crucible for evaporating droplets of the molten coating material on the crucible, the separate beam pattern having a higher intensity than the beam pattern on the coating material.